

## CLAIMS

What is claimed is:

1. A blade server performance management method for use on a blade server including a cluster of server modules, each server module being capable of offering at least  
5 two different operating modes, for providing a performance management function on the clustered server modules in the blade server;

the blade server performance management method comprising:

performing a power-load detecting procedure to detect the current distribution of power load by the power supply of the blade server to the clustered server modules in the  
10 blade server;

if the current distribution of power load to the clustered server modules is below a rated power level, performing an operating mode inspecting procedure to inspect the current operating modes of the server modules to find the highest-performance server module; and

15 performing a power-initiated operating mode adjusting procedure to switch the highest-performance server module to a lower level of operating mode.

2. The blade server performance management method of claim 1, further comprising:

performing a temperature inspecting procedure to inspect whether the current working temperature of each of the server modules in the blade server is below an  
20 overheating limit;

if NO, performing a temperature-initiated operating mode adjusting procedure to switch the overheated server module to a lower level of operating mode.

3. The blade server performance management method of claim 2, wherein the temperature-initiated operating mode adjusting procedure is carried out by activating the overheated server module to perform a TCC procedure to lower its working temperature by reducing performance.

5 4. The blade server performance management method of claim 1, wherein the operating modes of the clustered server modules include an automatic mode and an on-demand mode, wherein the on-demand mode is lower in performance than the automatic mode.

5. The blade server performance management method of claim 1, wherein the  
10 operating modes of the clustered server modules include an automatic mode and a throttling mode, wherein the throttling mode is lower in performance than the automatic mode.

6. A blade server performance management system for use with a blade server including a cluster of server modules, each server module being capable of offering at least  
15 two different operating modes, for providing a performance management function on the clustered server modules in the blade server;

the blade server performance management system comprising:

a power-load detecting module, which is capable of detecting whether the current distribution of power load by the power supply of the blade server to the clustered server  
20 modules in the blade server is below a rated power level, and if yes, capable of issuing a power-initiated mode down request;

an operating mode inspecting module, which is capable of inspecting what operating mode is currently being set to each of the clustered server modules in the blade server to find the highest-performance one of the server modules; and

an operating mode adjusting module, which is capable of being activated in  
5 response to the power-initiated mode down request from the power-load detecting module and based on the inspected information from the operating mode inspecting module to switch the highest-performance server module to a lower level of operating mode.

7. The blade server performance management system of claim 6, further comprising:

a temperature inspecting module, which is capable of inspecting whether the  
10 current working temperature of each of the clustered server modules in the blade server is below an overheating limit; and if NO, capable of initiating a temperature lowering procedure to lower the working temperature of the overheated server module by switching the overheated server module to a lower level of operating mode.

8. The blade server performance management system of claim 7, wherein in the  
15 temperature lowering procedure, the temperature inspecting module issues a temperature initiated mode down request to the operating mode adjusting module to activate the operating mode adjusting module to adjust the overheated server module to a lower level of operating mode.

9. The blade server performance management system of claim 7, wherein in the  
20 temperature lowering procedure, the temperature inspecting module issues a TCC enable message to the overheated server module to activate the overheated server module to perform a built-in TCC procedure to lower its working temperature by reducing performance.

10. The blade server performance management system of claim 6, wherein the operating modes of the clustered server modules include an automatic mode and an on-demand mode, wherein the on-demand mode is lower in performance than the automatic mode.

5 11. The blade server performance management system of claim 6, wherein the operating modes of the clustered server modules include an automatic mode and a throttling mode, wherein the throttling mode is lower in performance than the automatic mode..

12. A blade server performance management system for use with a blade server  
10 including a cluster of server modules, each server module being capable of offering at least two different operating modes, for providing a performance management function on the clustered server modules in the blade server;

the blade server performance management system comprising:

a power-load detecting module, which is capable of detecting whether the current  
15 distribution of power load by the power supply of the blade server to the clustered server modules in the blade server is below a rated power level, and if yes, capable of issuing a power-initiated mode down request;

an operating mode inspecting module, which is capable of inspecting what  
operating mode is currently being set to each of the clustered server modules in the blade  
20 server to find the highest-performance one of the server modules;

an operating mode adjusting module, which is capable of being activated in response to the power-initiated mode down request from the power-load detecting module

and based on the inspected information from the operating mode inspecting module to switch the highest-performance server module to a lower level of operating mode; and

a temperature inspecting module, which is capable of inspecting whether the current working temperature of each of the clustered server modules in the blade server is  
5 below an overheating limit; and if NO, capable of initiating a temperature lowering procedure to lower the working temperature of the overheated server module by switching the overheated server module to a lower level of operating mode.

13. The blade server performance management system of claim 12, wherein in the temperature lowering procedure, the temperature inspecting module issues a temperature  
10 initiated mode down request to the operating mode adjusting module to activate the operating mode adjusting module to adjust the overheated server module to a lower level of operating mode.

14. The blade server performance management system of claim 12, wherein in the temperature lowering procedure, the temperature inspecting module issues a TCC enable  
15 message to the overheated server module to activate the overheated server module to perform a built-in TCC procedure to lower its working temperature by reducing performance.

15. The blade server performance management system of claim 12, wherein the operating modes of the clustered server modules include an automatic mode and an on-  
20 demand mode, wherein the on-demand mode is lower in performance than the automatic mode.

16. The blade server performance management system of claim 12, wherein the operating modes of the clustered server modules include an automatic mode and a

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throttling mode, wherein the throttling mode is lower in performance than the automatic mode..

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